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ALBERT H. MILLER — *Physician*

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*"Few surgical fatalities are due to faults in surgical technic. They result rather from depressed or otherwise abnormal condition of the patients, from lack of preparation, from attending features of the operation, such as abnormal postures and improper operating room conditions, and from faulty administration of anesthetics. It is the duty of the anesthetist to understand and to safeguard the patient's physical powers."*³⁶

THESE BELIEFS of Albert Miller were written twenty-three years after he had established the Department of Anesthesia at the Rhode Island Hospital. They were written, not so much to point out deficiencies as to plot out for himself, as well as for others, the direction in which studies and labors should extend to improve the lot of the surgical patient. His professional life was committed to the thesis that "It is the duty of the anesthetist to understand and to safeguard the patient's physical powers." To "understand" he studied patients preoperatively, during the operative phase, and postoperatively. To "safeguard" he investigated the hazards of clinical endeavor, surgery and anesthesia. When he determined some of the dangers inherent in these practices he tried to find some way to eliminate or minimize them. In great measure he succeeded, for much of the growth and direction of the practice of surgery in this community is a result of Albert Miller's concern with the welfare of the patient and his endeavors to improve the patient's ability to tolerate some of the ill effects of surgical intervention. His contributions* were many and his influence was felt throughout the entire world. Modern-day anesthesia is indebted to him for his pertinent and accurate observations.

"... Surgical fatalities ... result ... from depressed or otherwise abnormal condition of the patients, from lack of preparation ..."

*See appended bibliography.

From the very beginnings of surgery some patients did poorly or succumbed from the effects of anesthesia and operative procedures. It had been generally accepted that those in poor condition did not do as well as those who were in good physical status. Doctor Miller was among the early few who set out to determine specifically what, in the patient's preoperative condition, might alter his chances of ultimate recovery. To do this required evaluation of the patient. This was accomplished with difficulty for there was resistance to such a procedure. He notes "The advantage of a preliminary physical examination would seem to be self evident but its adoption met with considerable opposition. . . . Some surgeons seemed to consider it a personal affront that their patients should require a physical examination before a contemplated operation."⁷⁴ Doctor Miller himself carried out the preoperative physical examination, and by his example, interest, and gentle tact he finally succeeded in establishing this practice as a real need.

His preoperative studies of patients were painstaking. He noted the patient's age and appearance, condition of heart and lungs, urinalysis, and blood pressure determination. Detailed records of these examinations were kept, and as a result he was able to correlate preoperative findings with postoperative complications. His scientific acumen may be recognized by the way he avoided the pitfalls of many such statistical studies, for he wrote "As the examination is made from the anesthetic standpoint, the surgical condition is noted in a general way but is not particularly studied."²⁷

He studied the relationship of age and postoperative complications and determined that, in cases where complicating organic disease was discovered at the preliminary examination, the mortality rate in patients over 50 was 14 times as great as that in patients less than 50 years of age. He studied the influence of demonstrable cardiac lesions on surgical prognosis and noted they have little effect in the production of postoperative mortality.

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On the basis of such studies he established a classification of patients as to operative risk. In Class A were patients free from organic disease whose surgical condition was not likely to prove fatal. Class B patients were those suffering from organic disease, but whose surgical condition was not especially serious, and in Class C were those whose surgical condition was so serious or so far advanced that fatality was likely to result. He commented that all the patients in the first class were expected to recover. All operations on patients in the second class were approached with less assurance, and major operations were performed only when urgently required. In the third group when operations were urgently necessary, a high degree of mortality was to be expected.

Studies of several thousand consecutive patients revealed that it was possible to recognize preoperatively some unnecessary hazards. With such supported conclusions at hand he spread far and wide a plea for delay in operating on patients with conditions which might be improved to lessen the dangers of surgery. Preoperative study of patients is now generally practiced, for it is recognized that such evaluation reveals deficits, and deficits once recognized are apt to be corrected. The lesson Doctor Miller taught the surgical world was an important one — one unfortunately that has to be relearned from time to time.

"... Surgical fatalities are due to ... attending features of the operation, such as abnormal postures and improper operating room conditions. ..."

Doctor Miller studied the changes in physical signs of patients undergoing surgery. These observations, coupled with a personal knowledge of the patient's preoperative physical state, enabled him to determine the differences in the tolerance of individuals to surgical intervention. He recognized the role of blood pressure determination in evaluating changing circulatory states, and as a result much of the early information in regard to shock in the operating room stemmed from his studies. It was in the detection of shock that he believed blood pressure determination had its most practical value. He played an important role in the establishment of determining blood pressures routinely, and his studies revealed the direct relationship between hypotension and blood loss, trauma, and changes in posture.

Continued close observation of blood pressure changes during surgery led him to be perhaps the first doctor to recognize the effect on blood pressure produced by traction on the uterus or gallbladder, manipulation of the intestine, and the intra-abdominal introduction of gauze packing. He noted that removal of a large abdominal tumor was often associated with precipitous hypotension.

He recognized the dangers of some surgical pos-

tures and wrote: "Besides such well recognized causes of preventable surgical deaths as broken asepsis, insecure ligatures and incompetent anesthesia, the influence of ill advised posture must also be considered."⁶⁴ Doctor Miller for years had been concerned with the effect of anesthesia on respiration and many of his most important studies were in this connection. He determined that placing the patient in some surgical postures interfered with the patient's ability to ventilate himself properly. He found that when patients were placed prone, they developed a marked respiratory handicap, and he went to great effort to discover the various means which might be used to employ this position with minimum hazard to the patient. He measured the degrees of respiratory involvement occasioned by placing patients in various surgical postures. He was always an advocate of conservative and slow changing of patients' positions. He devised a series of symbols to denote the various surgical postures and recorded them religiously on his chart so that he could correlate alteration in the patient's condition with changes in surgical posture.

"... Surgical fatalities are due to ... faulty administration of anesthetics."

In 1899, as a surgical resident at the Rhode Island Hospital, he wrote the first of his many contributions to the field of anesthesia. In this article he emphasized the dangers to the patient of oxygen deprivation, and showed how oxygen want was an ever-present accompaniment of nitrous oxide anesthesia as then practiced. He submitted an improved and safer technic for the administration of nitrous oxide employing an open cone, as a preliminary to ether anesthesia. This method, he believed, was first used at the Rhode Island Hospital, and he claimed that it increased the safety of the patient, inasmuch as "Cyanosis and danger of asphyxiation are done away with, and the patient constantly breathes fresh air."¹ This was indeed revolutionary, as heretofore nitrous oxide had been administered to patients with no oxygen added, with inhalers into which there was no possibility of the ingress of air. His understanding of the need to meet oxygen requirements led him to early adoption of the practice of adding oxygen to nitrous oxide. He later described an apparatus which he had devised for the production of nitrous oxide-oxygen anesthesia, wherein physiologic requirements were more nearly satisfied.

He recognized that not only may improperly given anesthesia cause death, but that, even when ideally administered, it may expose the patient to dangers. He noted that the ill effects of anesthesia may be delayed, and he studied the postoperative mortality from anesthesia. In a series of 5,000 patients he determined the relative effects of nitrous oxide anesthesia and ether anesthesia to postopera-

tive circulatory complications, with specific regard to phlebitis. He extended his studies to the occurrence of coronary embolism, cerebral embolism, cerebral hemorrhage, and pulmonary embolism in relation to the anesthetic agents employed.

In his usually modest and restrained fashion Doctor Miller stated, "Our methods of administering anesthetics do not bear investigation well. Unmeasured amounts of these powerful agents are employed to produce what some authorities are fond of calling 'absolute surgical anesthesia.'" ²⁸ He felt that deep ether anesthesia contributed to shock and endeavored to keep the dosage of anesthetic agents small. His early appreciation of the fact that the signs of anesthesia were indistinct and that anesthetics were administered by guess rather than by rule led him to make one of the most important observations in surgery and anesthesia. It was Doctor Miller's brilliant power of observation which with his accurate recordings led to his discovery that, with increasing depth of anesthesia, the intercostal muscles of respiration become paralyzed before the loss of diaphragmatic respiration. His article titled *Ascending Respiratory Paralysis Under General Anesthesia*⁴⁰ was his greatest single contribution and placed the administration of anesthesia on a scientific basis. This article is today universally accepted as a cornerstone of anesthesia progress, for it was the first time on this continent that a physician had carefully labored to observe, identify, record, and correlate the sequence of abolition of respiratory reflexes and responses to the increasing depth of ether anesthesia. Although this had been done previously by John Snow in England, this work was poorly known throughout the world. It was because of Doctor Miller's observations that Doctor Guedel later used Doctor Miller's findings as a basis for the Guedel classification of planes and stages of anesthesia.

Recognition of the sequence of paralysis of respiratory musculature was based upon observation and was later supported by pneumographic studies by Doctor Miller. This continued interest in the importance of thoracic and diaphragmatic respiration under anesthesia led him to recognize the extent of the hazard of poor posture on the table and to decry the interference with bodily function by placement of an anesthetized patient in the prone position. Doctor Miller's knowledge in this field led him to point out that, contrary to what was the almost universal practice, it is important on occasion to lighten ether anesthesia to improve surgical exposure. He knew that exaggerated movement of the abdomen was due to excess diaphragmatic activity because of intercostal paralysis. It had been mistakenly accepted that excess motion during surgery within the upper abdomen was probably due to light anesthesia and attempts to quiet over-

active abdominal motion by deepening anesthesia resulted in overdosage and often in death.

Among his contributions to new technics was one which not only contributed to improved comfort and safety of the patient, but also had a direct influence on the advancement of surgery. This was his technic of pharyngeal anesthesia. Doctor Miller records that this was first carried out at the Rhode Island Hospital. This procedure allowed for the continuous administration of a potent anesthetic agent while allowing the surgeons to work unhampered in the upper respiratory passages; the mouth, nose and throat. It also made possible the administration of smoother and better anesthesia for cranial surgery and for surgery in unusual postures. The technic of pharyngeal anesthesia as first devised was by the use of a foot pump. This, however, was soon supplanted by a motor compressor. An important result of this effort was that Doctor Miller evolved a method for the administration of ether wherein ether concentration was always exact, a tremendous forward step in making anesthesia safer. His belief in exactness was characteristic of all his endeavors. He repeatedly spoke of the necessity of always measuring the amount of ether administered, whether by drop or by vaporizer.

Throughout his work he evidenced concern with the comfort and convenience of the patient, for when he developed a new inhaler for nitrous oxide-oxygen anesthesia, it was so devised that a specially provided valve would allow the patient to breathe room air for a period before induction. The introduction of this particular valve is interesting, for it incorporated a far-advanced design. What he had developed at that time is now being used throughout anesthesia as a non-rebreathing valve. I believe there were occasions when he did use the valve in this fashion, but nowhere in his writings is he explicit in this regard.

Another contribution of Doctor Miller's to the welfare of the patient and to improved surgical practice was his work in connection with intrathoracic surgery. He developed a method of administration of anesthesia to patients undergoing surgery within the chest cavity, which protected the patient from the hazards of surgical pneumothorax. The technic for positive pressure anesthesia was devised specifically for the transthoracic repair of diaphragmatic hernia. Doctor Truesdale's success in the development of the operation for this condition was dependent entirely upon Doctor Miller's ability to keep the patient anesthetized and alive.

In an article he wrote concerning anesthesia for chest surgery he demonstrates his great understanding of the physiologic principles concerned. He recognized the adverse effects of elevated intrapulmonary pressure on mediastinal structures and

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upon the efficiency and function of circulation and respiration. It was only after he had thoroughly acquainted himself with efforts previously made to establish safe differential pressures for intrathoracic surgery that he developed an apparatus for the administration of anesthesia for this type of surgery.

Doctor Miller's name should be added to that small group of pioneers who demonstrated that surgery within the thorax is compatible with life and who pointed the direction to take whereby mortality due to surgical pneumothorax was reduced to its present-day low level. Although the method devised by Doctor Miller is no longer used today, it was the basis for the development by Doctor Barach years later of a method of maintaining constant positive pressure breathing.

"It is the duty of the anesthetist to understand and to safeguard the patient's physical powers."

Doctor Miller took seriously his responsibility for the patient. He believed himself "a silent watcher of the thread of life, ready to maintain the integrity of that thread by every means obtainable from study and application."³⁰ He would allow no improper placement of patients on the operating table. His patients were always protected from oxygen want by satisfactory airways and the addition of oxygen to the ether cone. Never were his patients overdosed and he would withstand with calmness and great dignity the pleas of surgeons for deeper anesthesia. He knew the hazard of surgery and anesthesia on patients in poor condition, and, as previously stated, he would plead for delay in surgery to allow for improvement in their physical status.

Knowing of the hazards of anesthesia and the dangers of surgery, he maintained a constant vigil over his patients, recording at regular intervals the effects of external influences on bodily function by changes in vital signs. He was among the very earliest to develop and use an anesthesia record. Although anesthesia records were developed earlier by Doctors Codman and Cushing in Boston, it is believed that the first continuous use of anesthesia records was begun at the Rhode Island Hospital. These records were the basis for constant review of patients and served as a continuing source for study of the myriad effects of anesthesia and surgery.

He was a student of the history of anesthesia, especially as it concerned Wells and Morton. This interest extended to consideration of the actual creation of the word "anesthesia." He reported on a visit to the birthplace of Morton and on the occasion of a gathering of anesthetists at the grave of Morton he rendered an address. He was interested in the historical aspects of inhalation therapy in general, but he was especially interested in the work

of Thomas Beddoes, a pioneer in this form of therapy. He contributed to the literature on the technic of inhalation therapy and resuscitation.

Throughout all his writings there is evidence of his interest in statistics. His studies of the classification of patients, and his use of anesthesia records to show the circulatory effects of anesthesia and surgery extended into proposing a numerical system of hospital records.

In 1931, the Rhode Island Medical Society honored him with the Fiske Fund Prize for his essay titled *Anesthetics—Their Relative Values and Dangers*.⁵³ This contribution is an excellent summary of the pharmacologic effects of various anesthetic agents and narcotics. Herein he reviewed briefly some of the methods of inhalation anesthesia. He devoted a considerable portion of the effort to a statistical study concerned with the safety of anesthetic agents. On the last page of the essay he rated anesthetics in the order of their comparative value under different conditions. This article is noteworthy for its bibliography.

Doctor Miller spent much time in teaching. In this he had much of the zeal of a missionary. He believed firmly that no surgeon could be a good surgeon unless he had training in anesthesia. He held weekly meetings with interns in the basement of the old Rhode Island Hospital building. Here he lectured and held discussions on anesthesia. It did not require the usual distribution of cigars to entice the interns to return for the following week's talk. He instilled into the minds of a generation of surgeons the need for consideration of the dangers of interference with physiologic processes during surgery.

In 1935, Doctor Leo V. Hand was appointed full-time resident in anesthesia. This had great significance, for there had been a time when the progress of anesthesia had been threatened by the increasing use of technicians for administration. This trend was resisted in Rhode Island, primarily because of Doctor Miller's belief that anesthesia could develop and progress only if its future were entrusted to physicians who had good knowledge of physiology and pharmacology. The fact that a young man of Doctor Hand's ability could become interested in the specialty as his life's work attested to Doctor Miller's success.

He exhibited some prophetic vision, for at one time he stated, "Perhaps the tongue forceps and mouth gag will next give place to the electrocardiograph. At all events, the future anesthetist will take every advantage of the hour of precaution, which is worth more than a thousand years of regrets."¹⁸ It took a hiatus of many years, but today the electrocardiograph and other such monitors are enabling the anesthetist to take advantage of "the hour of precaution."

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ALBERT H. MILLER: *The Art of Anesthesia*

LEO VINCENT HAND, M.D.

The Author. *Leo Vincent Hand, M.D., of Boston, Massachusetts. President-Elect, American Society of Anesthesiologists, Inc.*

IN THE RECENT LITERATURE we have increasing evidence of the rapid strides and increasing knowledge pertaining to the science of anesthesiology. This is proper and progress. But as is true of all progress, it is built upon the steppingstones of the past. It is of this past, more properly known as the *Era of the Art of Anesthesia* I now write, and in particular of the contributions of a great pioneer, our beloved Albert Miller, an outstanding teacher with a keen intellect and one always interested in clinical research.

He truly is accorded the title of "Master." He, with the other great pioneers, Gwathmey, Flagg, Richardson, Allen, Sise, Waters and Lundy to name but a few, truly was instrumental in today's progress.

What is the *Art of Anesthesia*? Possibly the most concise and inclusive definition is best expressed in the words of Flagg, "It will be perceived that while a knowledge of laws is essential, yet this knowledge is superseded by the ability to properly apply them. This controlling element is what constitutes the essence of the Art. Experience begets dexterity, tact and skill. These qualities, while somewhat intangible, are nevertheless indispensable. They imply a correct and spontaneous response to the demands of the patient. The *Art of Anesthesia* implies an intimate knowledge of general medicine, pathology, surgery, therapeutics, psychology and special branches. Those who are not familiar with these subjects cannot understand the language (the Art) of anesthesia."

The above concisely portrays Doctor Albert Miller: "ability to properly apply," "experience, dexterity, tact, skill" and an "intimate knowledge" of the above branches of medicine. It is these, his intangible but nevertheless indispensable qualities that I, his first resident in the newly formalized specialty of anesthesia at the Rhode Island Hospital in 1935-36, clearly recall. Many of our colleagues in the Rhode Island Hospital were indeed fortunate to have a brief period under his instruction while they served a two-month period in anesthesia during their internship. It was my good fortune to

spend one additional year as the first resident under Doctor Miller and later under his successor, Doctor Frank Mathews.

First Impressions

Some specific experiences are still vivid. His dicta are still valid and applicable to modern, scientific anesthesia. Before I recount these teachings and lessons a work picture of this man in the eyes of his department and in particular his first resident is in order. What were the first impressions upon meeting him, as an intern? As we stand around the operating room supervisor's desk checking the daily surgical and anesthesia schedule we saw coming down the hall toward Nellie Hughes's desk, the Yul Brynner of the Rhode Island Hospital; a man of medium height, slim and trim, with a spring to his step. As he approached the desk and schedule, we heard Nellie Hughes in an audible voice remark: "Here comes bad news, what gadgets today?" They were the best of friends, Nellie was in her usual form with the repartee. We note he was soft-spoken. There was a slight hesitancy to his speech, almost as if he was weighing his words. He had particularly expressive eyes, sharp, bright, but pleasant with a suggestion of a twinkle to them. He observed everything. He was beloved by his department members, nurses and doctors. Many there were but one in particular, Kitty McCloud, stood out. She above all exemplified his teachings: wonderful patient care, kind, sympathetic, always willing and working, pleasant, soft-spoken, gentle and efficient. Her greatest pleasure was to pass along all the "pearls" she had received from the "chief," Doctor Miller. It was always, "Doctor Miller this, Doctor Miller that."

The first lesson in the *Art* from Doctor Miller concerned preoperative visits and preanesthetic medication orders. The usual routine of his era was for the surgeon to evaluate the patient's anesthetic risk and then the surgeon wrote the preanesthetic medication orders. Doctor Miller insisted that the proper practice was for the anesthetist to establish rapport with the patient, study in detail the medical records, check if necessary his own physical findings, evaluate the patient's physical status or risk together with his emotional condition and then order adequate and proper preanesthetic medication. Such practices controlled metabolic activity

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thus insuring a well-sedated, non-apprehensive and co-operative patient for induction of anesthesia. This exemplified the qualities of tact, and understanding of patient psychology and intimate knowledge of therapeutics.

It was from Doctor Miller I received my first lessons as to how to prepare the patient in order to insure ideal conditions for anesthesia induction and maintenance. With sympathetic understanding he obtained the patient's confidence. With the skillful use of drugs, morphine and atropine, he depressed metabolic activity, emotional excitement and tensions. With these drugs he lessened vagal reflex activity and obtained conditions which enhanced the passage of the agent, usually ether, from the lungs into the blood stream.

He lectured long and frequently on the safety of a properly administered ether anesthesia. He was and still is an authority on the use of ether and its advantages. To again quote Flagg in his book: "as stated by Miller, — it is properly administered. It is also undoubtedly true, that any other anesthetic handled with the gross negligence with which ether has been administered would long ago have been discarded."

As a Teacher

The following are but a few of his teachings as to "the ability to properly apply." Always use adequate oxygen when employing any agent. When using nitrous oxide always maintain an 80-85% nitrous oxide 20-15% oxygen mixture. On the old Gwathmey machine "four holes of nitrous, one hole of oxygen bubbling at all times." While he demonstrated the "secondary saturation" nitrous oxide technic he did not approve or advocate its use. He always insisted, and it since has been substantiated, that such a technic was a hazardous and dangerous procedure. Such initial anesthesia was obtained by severe hypoxia. He carried his teaching one step further and demonstrated that with confidence and time, not only was a hypoxic induction unnecessary (a prevailing practice of this era) but also more ideal operating conditions were obtainable with his careful ether cone technic. By gravity nitrous oxide-oxygen was administered through this properly constructed cone to which ether, slowly and carefully was added. It resulted in a very smooth transition from analgesia to surgical anesthesia. He indeed was twenty years ahead of his era.

It was in the administration of ether that he was the artist. He often stated the best ether anesthesia required not only skill but constant attention to detail. The first important detail was the equipment, the *cone*. He modified the old routine paper, towel covered, ether cones. He insisted that an optimal rebreathing area was a necessity in all cones. With

his specially built ether cones with metal diaphragms, covered with 6-8 layers of gauze, one could carefully and confidently anesthetize any patient for most surgical operations with as little as 4-8 ounces of ether for a 2-4 hour operation. This ether was dropped, not poured, on the gauze slowly so that the patient's heated exhalations volatilized the liquid to a gaseous state. He always insisted that the best and proper anesthesia demanded more than an ether cone slapped to the patient's face and then this cone saturated, frequently dripping with ether. As he often stated, "anesthetize the patient with the fumes, do not burn or drown him with the liquid." Ether anesthesia was thus obtained by volatilizing the fluid and the patient then inhaling the fumes to which was frequently added a constant flow of oxygen by means of an oxygen catheter. Such a technic resulted in a smooth transition into and maintenance of the third plane of the surgical stage of anesthesia. Again evidence of his skill, dexterity and ability to properly apply.

Another "pearl": "a wet patient is usually an anoxic (hypoxic) patient. An anoxic patient is rarely adequately relaxed irrespective of the depth of anesthesia." Oh how true!! This "pearl" recalls to mind a vivid recollection of his qualities of understanding, tact and judgment. One morning during a hectic schedule I was called into the gynecology operating room because of difficulties of relaxation during a trying period of pelvic surgery. The nurse anesthetist was almost in tears, the surgeon, Dr. G., was very disturbed and was insisting that the anesthetist increase the depth of anesthesia in order to obtain the necessary relaxation. The nurse stated the patient was "deep." The surgeon insisted the patient was "light." I, with an exaggerated idea of my supervising importance, decided to "give the surgeon a lesson." I took over. I increased the depth of anesthesia into the fourth stage or stage of respiratory cessation, just short of cardiac arrest. I then informed the surgeon that the patient was now "almost dead" and that the operating conditions were unchanged. The surgeon almost had apoplexy. I still remember Doctor Miller's words on this occasion: "There are many other ways of killing the cat than choking him to death with butter." "Leo, you first jeopardized the patient; second, you further disturbed the surgeon when he had problems, and was already greatly disturbed. You could have accomplished all you desired by using judgment and simply adding oxygen to your anesthesia. You could have discussed the conditions and facts later under better conditions. There were many ways physiologically and psychologically you could have accomplished your primary purpose, patient safety and optimal operating conditions."

A Keen Clinical Investigator

I mention "depth of anesthesia." To Doctor Miller we are indebted for his classical review of the respiratory signs of Anesthesia. He has received surprisingly little credit for his original and classical work. Others that followed have added some modifications and these modifications are now popularized in the literature. His basic review has been unchanged. All this demonstrates and is evidence of his keen clinical investigative and correlative skill, indeed he was ahead of his era and without a peer. His original work has been our standard for the past forty years.

His teachings were not in inhalation anesthesia alone. A few spinal anesthetics were of the procaine barbitage technics and used primarily in genito-urinary surgery. Intravenous anesthesia was limited to the barbiturate Evipon. This agent and method was not approved by Doctor Miller. Rectal anesthesia also was poorly controllable and large doses were recommended based on German technics. Because of the poor control and large doses recommended very little intravenous or rectal anesthesia were employed. As ether then was the most controllable agent and had and still has the widest margin of safety it was his agent of choice. Heavy medication was employed to lower metabolic activity. Despite widespread usage, chloroform was not approved or employed, because of its hepatotoxic and cardiotoxic dangers. Present-day practices confirm his opinion as to its hazard. Again Doctor Miller with his keen judgment and astute knowledge was a leader in this specialty.

His teaching was not limited to the Rhode Island Hospital. He was a prolific writer not only concerning anesthesia but he was also a historian of distinction. Combined with his writing and teaching he was an avid collector of books, journals, reprints and pamphlets on anesthesia and allied subjects. He had, and I presume still has, an extensive library. I do know he had the only complete library of the editions of the first and foremost publications in anesthesia, *ANESTHESIA AND ANALGESIA*. The early volumes of this Journal are collectors' items.

Indeed I realize in closing that this is but a sketchy word picture of a great pioneer and an excellent teacher. Indeed he was a leader, a man ahead of his era in both clinical practice and investigative research in anesthesia. He inspired confidence in his patients and affection and respect from his subordinates. He was beloved and respected by all who came in contact with him; patients, surgeons, associates, subordinates and students. Indeed he had all the attributes and qualities that Flagg states so necessary to understand and practice the *Art of Anesthesia*: experience, dexterity, tact and skill; all combined resulting in a correct

and spontaneous response to the demands of the patients, his first and foremost consideration.

ALBERT H. MILLER — PHYSICIAN

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Doctor Miller, in opening a paper describing the growth of anesthesia in Rhode Island, quoted Abbé Henri Breuil who had said "Every being, every thing, every institution, derives, at least in greater part, from its antecedents, and is, in turn, at least in greater part, the starting point of the realities which follow it."⁷⁴ It is proper that we acknowledge our indebtedness to our antecedents by stating that "at least in greater part, the starting point of the realities" of the present status of anesthesia is derived from Albert Miller.

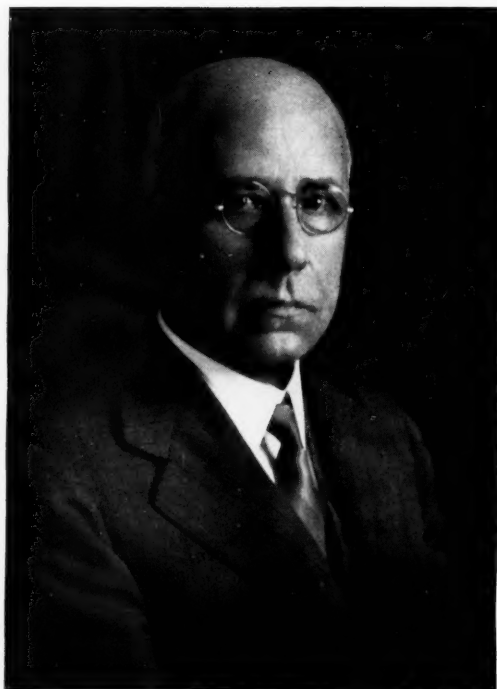
In 1902 he wrote, "To relieve pain and prolong life, these are the aims of medicine, and anesthesia, during its short fifty years of existence has not been the least of the means for producing these results."⁷⁵ These words were written fifty-seven years ago, and this ideal became his personal aim, in which he succeeded well. But transcending his personal success is his achievement in transmitting to us his teachings by example and recorded word.

We are grateful that, because of him, we who are privileged to try "To relieve pain and prolong life," can do so with greater safety and success.

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Bachrach photo

ALBERT HENRY MILLER, M.D.

THE LIFE OF ALBERT H. MILLER

A Factual Account of Doctor Miller's Life Based on Data Furnished by his Wife,
Mrs. Ada Holding Miller, to Doctor Alex M. Burgess, Sr.

TO THOSE of his colleagues to whom his life and work and his endearing personality have been an inspiration, a simple account of the sequence of events in his training and professional career will be of interest. Elsewhere in this issue there appear articles by two distinguished anesthesiologists who knew him as a great leader in the field in which they were in training, and who followed in his footsteps.

Doctor Miller was born in Lewiston, Maine, on April 3, 1872. He was graduated from Bates College in 1894, and a year later from the School of Science at Bowdoin. In 1898 he received the degree of Doctor of Medicine from the College of Physicians and Surgeons, Columbia University, New York. The next year he spent as intern at the Central Maine General Hospital at Lewiston and served a second year of internship at the Rhode Island Hospital.

He was appointed anesthetist to the Rhode Island Hospital in 1900, and shortly thereafter to St. Joseph's Hospital and Memorial Hospital, Pawtucket. He later became anesthetist to Providence Lying-In Hospital, Butler Hospital, South County Hospital, Truesdale Hospital, Fall River, and others. His achievements in his field are well described in the articles by Doctor Saklad and Doctor Hand, and a complete bibliography of his publications is appended to the former article.

It is worthy of note that immediately after his appointment at Rhode Island Hospital as anesthetist, his first decision was to do away with the old, closed-cone method of giving ether. The cone used was made from woven Butcher's cuffs which were covered with an oiled silk and completely closed at one end. Doctor Miller substituted an open cone he had invented and his new method came under close scrutiny of a group of surgeons appointed by the trustees of the hospital. Subsequently the surgeons reported that Doctor Miller was not only having spectacular results with particular comfort to the patients, who could now take an anesthetic without a choking feeling, but he was also saving ether instead of wasting it. The method he initiated is still used.

Doctor Miller also developed a method of anesthesia for intrathoracic surgery, which he called "constant pressure nitrous oxide-oxygen anes-

thesia." Before this method was used the mortality from diaphragmatic hernia was more than 50%. Following the introduction of the new method Doctor Miller handled twelve cases of diaphragmatic hernia without a single death.

His work was appreciated both in the United States and abroad. He was president of the American Society of Anesthesia in 1918 and again in 1920, president of the Eastern Society of Anesthesia in 1927 and of the Boston Society of Anesthesia in 1926, 1927, and 1928. In addition, he was chairman of the American Medical Association Section on Anesthesia in 1933. With Doctors E. I. McKesson and Adolph Erdmann he served on the Record Committee of the International Anesthesia Society. From this society he received the medal and cup award with this statement, "From the Associated Anesthetists of the United States and Canada as a token of appreciation for splendid services in this organization; for research, practice, and teaching of anesthesia."

It is interesting to realize that while a student he worked under such great surgeons as Bull and McBurney, and it was the influence of the latter that was largely responsible for his decision to specialize in anesthesiology. Other great clinicians, one of whom was Doctor Francis Delafield, shared in the responsibility of training him in medicine.

He is credited with the introduction, in 1899, of gas oxygen-ether anesthesia which was widely used after initial demonstrations at Massachusetts General, Boston City, and the Harlem (New York) hospitals.

In 1906, with Dr. Halsey DeWolf, of Providence, he established the Garland Ward on Jamestown Island where crippled children received special treatment utilizing sea water and bathing exercises, and special diets, a revolutionary program at the time, but later generally used in rehabilitative work.

Besides his work in his own specialty, Doctor Miller had broad, general interests in his profession. He was president of the Providence Medical Association in 1925-1926 and of the Rhode Island Medical Society in 1934-1935. From 1924 to 1927 he was editor of this Journal and he was managing editor from 1937-1942.

He was interested in medical history, especially

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The RHODE ISLAND MEDICAL JOURNAL

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HONOR TO A PROPHET IN HIS OWN COUNTRY

IN THIS ISSUE the Journal honors itself by doing honor to one of the most distinguished physicians in the history of Rhode Island, to whom it owes a great deal, Doctor Albert H. Miller.

Doctor Miller, a world leader in the field of anesthesiology, was, as noted in the account of his life that appears on another page, at one time editor-in-chief and managing editor of this Journal. His work in these positions was carried out with characteristic diligence, tact and skill, and was essential in bringing about the excellence this publication achieved in its earlier years. It is the hope of the present editors and the Publication Committee, a hope that beyond a doubt is shared by the entire membership of the Rhode Island Medical Society, that now, as he is retired and can contemplate in retrospect the fruitful years of his professional career, he may derive some degree of satisfaction from the affectionate tributes of his colleagues that appear in this issue.

The two major articles, by Doctor Meyer Saklad and Doctor Leo Hand, bear eloquent testimony to his great achievements as a leader in the practice and teaching of his specialty and as an investigator who made great advances in his field. He is truly a scholar and a gentleman. Doctor Saklad, now himself internationally renowned as a leader in his field, has made a careful and detailed study of Doctor Miller's career with which he was person-

ally very familiar. There is no one better able to give a real estimate of the life work of Doctor Miller, and this Doctor Saklad has done.

Doctor Hand, the first physician to work as resident under Doctor Miller, and now a distinguished anesthesiologist in a neighboring city, in his article has added a personal touch by which he makes the picture of his former chief still more human and inspiring.

There are, we are sure, hundreds of others of the profession who, if they had the opportunity to do so, could contribute many pages filled with incidents and experiences which would bear testimony to the professional skill and the human understanding and kindness that have always characterized this man. It is indeed a privilege to dedicate this issue of the Journal to our distinguished colleague.

"CENTRALIZING HEALTH DRIVES MAKES SENSE"

An editorial appearing in a prior issue of this Journal discussed the problem of the multiplicity of fund-raising drives by voluntary health agencies. It was then suggested that "there might . . . be some gain in combining or co-ordinating among themselves their fund-raising and fund-dispersing activities."

It is of interest to note that the American Heart Association has recently decided to convene a com-

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"CENTRALIZING HEALTH DRIVES MAKES SENSE"
concluded from page 588

mittee of physicians, scientists and community leaders to study the increasing number of fund-raising drives by such agencies. The announcement spoke of the "public confusion" caused by "the increasing number of appeals for support." This announcement was soon followed by endorsement of the plan by the American Cancer Society.

We agree most heartily with the quotation at the head of this column. It was the caption of an editorial in the ST. LOUIS POST-DISPATCH (quoted in THE EVENING BULLETIN of Providence) which further stated: "Most of us would be grateful for an objective survey of the urgency of research projects, and for a new approach to their support, an approach which would make it more nearly certain that contributions were used to do the greatest good for the greatest number."

The American Heart Association is to be congratulated for taking a new and critical look at the touchy and emotional problem of multiple fund-raising drives.

THE LIFE OF ALBERT H. MILLER
concluded from page 587

in the development of inhalation therapy and anesthesia. A real knowledge of history and of the Bible were his cherished possessions, and his principal hobby was his music. His wife, Mrs. Ada Holding Miller, to whom the writer is indebted for the details given in this factual account of his life, and who is a distinguished musician, says that, "For relaxation, after a heavy day, he would take off his coat, roll up his sleeves, and play Chopin hour after hour." He played the piano and the pipe organ very well.

In his life and work Doctor Miller carried out the principles of the Christian religion. He said, "I know that pain and death are necessary for life," but he believed that freedom from pain is one of the greatest blessings that can come to a human being. The alleviation, and even more the prevention of pain, safely and scientifically, and the search for even better methods of securing this result, were the objectives to which the major effort of his life has been dedicated, and in which his success has been outstanding.

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Thursday, October 22, 1959

HANS POPPER, M.D.

Pathologist-in-Chief, The Mount Sinai Hospital;
Professor of Pathology, Columbia University

Transition of Hepatitis into Cirrhosis

Monday, November 30, 1959

WILLIAM B. SCHWARTZ, M.D.

Senior Physician, New England Center Hospital;
Professor of Medicine, Tufts University School
of Medicine

*The Diagnosis and Management of
Urinary Tract Infections*

Friday, December 18, 1959

JAMES C. WHITE, M.D.

Chief of the Neurosurgical Service, Massachusetts
General Hospital; Professor of Surgery,
Harvard Medical School

*Neurosurgical Procedures for the Relief of Pain
in Malignant Disease*

Friday, January 15, 1960

HENRY L. JAFFE, M.D.

Director of Laboratories, Hospital for Joint Diseases,
New York City

*Bone Tumors: The Correlation of the Clinical and
Roentgenographic Findings with the
Pathologic Findings*

Friday, April 22, 1960

JOSEPH F. URICCHIO, M.D.

Assistant Professor of Medicine, Hahnemann
Medical College;
Cardiologist, Bailey Thoracic Clinic;
Staff Physician, Hahnemann Hospital;
Staff Physician, Children's Heart Hospital;
Consultant, Veterans Administration Hospital

A Medical Appraisal of Open Heart Surgery

KAPOSI'S SARCOMA (Angioreticulomatosis)*

BENCEL L. SCHIFF, M.D.

The Author, *Bencil L. Schiff, M.D., of Pawtucket, Rhode Island. Assistant Clinical Professor of Dermatology, Boston University School of Medicine; Dermatologist, Pawtucket Memorial, Miriam, Rhode Island, Charles V. Chapin, and Notre Dame hospitals, and at State Hospital for Mental Diseases.*

KAPOSI'S SARCOMA is usually found in mature individuals. The observation of this disease in the young is rare enough to warrant a report.

Report of a Case

A twenty-four-year-old white American of Portuguese ancestry was seen on October 28, 1958, complaining of an eruption accompanied by swelling, pain and occasional bleeding of the lower left leg and ankle. He stated that the eruption first appeared at the age of fifteen on his lower left leg and eventually spread to his foot, causing him no discomfort. Examination of the dorsum of the left foot revealed bluish red nodules measuring from 2 to 5 mm. in diameter. The lower leg showed a coalescence of nodules forming infiltrated plaque-like lesions. (Fig. 1.) History revealed he had received no systemic or topical treatment.

Laboratory results showed a normal blood chemistry and urine. Roentgenograms of chest and bones revealed no abnormalities.

A biopsy specimen of a nodular lesion from the ankle was reported by Doctor Micolonghi as follows:

Clusters of closely placed capillaries were seen beneath a thinned epidermis. The deeper dermal layers, displayed large, swollen endothelial cells with occasional mitotic figures. In the intervening stroma proliferating, spindle-shaped cells, lymphocytes, plasma cells, extravasated erythrocytes and deposits of pigment were noted. Pearl's stain was positive for hemosiderin. (Fig. 2.) Diagnosis: Kaposi's sarcoma.

Beginning on November 10, 1958, roentgen therapy was administered to the nodular lesion of the dorsum of the left foot. A total of 300 roentgens was given in weekly treatments. This was followed by 70 per cent regression of the lesions. (Factors:

*From the Department of Dermatology, Boston University School of Medicine (Herbert Mescon, M.D., Professor).

90 Kv. 5 ma. 1 mm. Al. filter, half-valve layer, 1.8 mm. Al. target skin distance 15 cm.)

Comments

This disease was first described by Kaposi in 1872.¹ Since then there has been much controversy concerning its true nature. Every conceivable facet of the disease has been recorded and discussed. As a result, about thirty-three descriptive terms have been suggested. The widespread impression that Kaposi's sarcoma is limited almost exclusively to the Jewish race is not supported by statistics.

DeAmicis² reported 50 cases of the disease seen in Italy, and none in this group was Jewish. Doerffel's³ opinion is that the distribution of Kaposi's sarcoma is geographic rather than racial, since the vast majority of patients appear to be Russian, Polish or Italians.

The disease generally occurs in individuals past middle age, mostly in the 5th, 6th and 7th decades,



FIGURE 1

Kaposi's Sarcoma in a twenty-four-year-old white male

and in men more than in women. The youngest patient was recorded by Chargin,⁴ who stated that he had observed a six-month-old infant with Kaposi's disease. Six cases of Kaposi's sarcoma occurring in the second decade were mentioned by Bluefarb.⁵

The etiology is unknown. The disease has been found in nearly every organ of the body, most frequent sites other than the skin being in order of frequency, the gastrointestinal tract, the liver, the lungs and the retroperitoneal and mesenteric lymphnodes.

According to Philippson⁶ the oral mucous membrane is the most common localization in the more advanced stages of the disease. So far as is known, the skin is almost always the first organ involved. The skin manifestation consists of various sized macules, papules, tumors, nodules, and plaques. The lesions vary in size from a millimeter to a centimeter in diameter. There may be only two or three lesions or there may be many. Babes⁷ counted 450 in one patient.

The lesions may be discrete, coalescent or conglomerate (MacKee and Cipollaro).⁸ They are firm, often shiny, rarely translucent and generally well demarcated. They may be round, oval or irregular. Occasionally a combination of infiltrated plaques and discrete nodules produces an extensive hard swelling, so that the involved hands, feet, arms

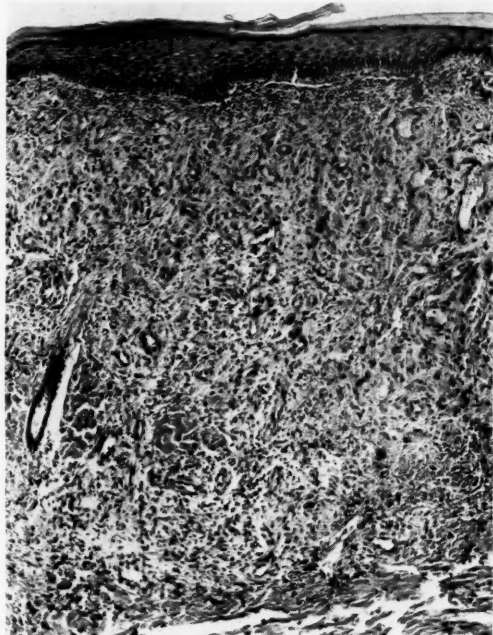


FIGURE 2

Section from a nodule showing vascular dilatation, swollen endothelial cells, spindle-shaped cells.

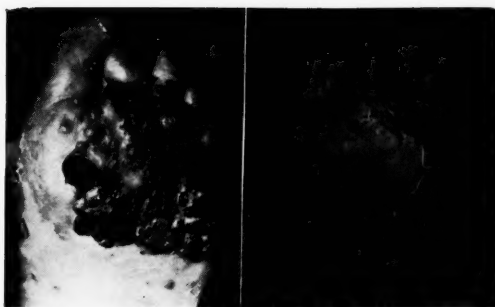


FIGURE 3

Before and after cathode ray treatment at the Massachusetts Institute of Technology, March-June, 1954, the first case of Kaposi's sarcoma so treated. No recurrences to date (Ronchese and Kern, Lymphangioma-like tumors in Kaposi's sarcoma, A.M.A. Arch. of Derm. 75:418-427, March, 1957).

or legs may attain the aspect of elephantiasis.

Unusual cutaneous features resembling lymphangioma circumscriptum or lymphangioma-like tumors have been reported by Ronchese and Kern.⁹ It has been thought that the extra-cutaneous lesions were metastatic. However, it is generally believed that such foci are primary and that there is no metastases. Kaposi's sarcoma often runs a slow course with intermittent remissions or exacerbations. Sometimes it may progress rapidly with involvement of internal organs. Death may be due to this or some intercurrent disease. Cases are on record of spontaneous cure, and of regression for years following therapy. The prognosis of Kaposi's in the very young is poor.

Modalities of treatment used in the past consisted of ultraviolet therapy, surgery and chemotherapy and arsenic.

Lately, the cathode ray therapy has shown remarkable results as reported and illustrated by Ronchese and Kern. (Fig. 3.)

SUMMARY

A case of Kaposi's Sarcoma in a twenty-four-year-old white American male, of Portuguese ancestry, is reported. A brief description of the disease and its treatment is presented. The incidence of this tumor in one so young was felt to be worthy of recording.

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ACUTE MASSIVE DIGITALIS INTOXICATION

RICHARD R. KNOWLES, M.D.

The Author, *Richard R. Knowles, M.D., Assistant Physician, Newport Hospital, Newport, Rhode Island.*

ACU TE MASSIVE DIGITALIS intoxication has been infrequently reported. Bergy et al., recently reviewed the literature and tabulated the outstanding clinical and electrocardiographic changes seen in eight reported cases of acute massive digitalis poisoning.¹ Only two of the reported cases were fatal despite the ingestion in a single dose of various preparations of digitalis in amounts equivalent to 6 mgm. to 50 mgm. of digitoxin. Because of the rarity of reported cases it is felt that the following case is of sufficient interest to warrant a case report illustrating serial electrocardiographic changes.

Case History

M.K. Newport Hospital #52942. The patient was a thirty-three-year-old housewife who was admitted to the hospital on September 22, 1957, with the chief complaint of "pounding of the heart." Seventeen hours prior to admission the patient ingested 3 oz. of whisky, 5.2 mgm. of digitoxin in the form of 0.2 mgm. tablets, and approximately 24 tablets of dramamine. She was unable to recall what had occurred during the next twelve hours, but according to her children she slept most of the time. However, she awakened at least once during this period and literally tore the front room of the house apart. The first thing the patient could definitely recall was a feeling of intense nausea followed shortly by vomiting approximately twelve hours after ingesting the medication. She vomited six to seven times and had one loose bowel movement prior to admission. She also noted paresthesiae particularly around the lips but also in the hands and feet. Fourteen hours after the ingestion of the tablets she noted an irregular and forceful pounding of the heart which was aggravated by minimal exertion.

Past History

There was no history of serious organic disease or of rheumatic fever, scarlet fever or syphilis. There was a long history of emotional instability with two divorces and three marriages in the previous fifteen years. She had made several superficial

attempts at suicide by the ingestion of various sedatives and on one occasion by slashing her wrists. None of the attempts had been serious enough to require hospitalization. She smoked 1½ packs of cigarettes a day for fifteen years and admitted to 8-9 quarts of beer and 12-16 oz. of whisky a week.

Review of Systems

There was no history of dyspnea, orthopnea, palpitations, paroxysmal nocturnal dyspnea, or edema. She denied chest pain. The remainder of the history was negative except for several episodes of hemorrhagic cystitis since the age of thirteen. The family history was noncontributory.

Physical Examination

The patient was a well-developed, well-nourished, depressed female of approximately her stated age who was complaining of nausea. Temperature: 96°. Blood pressure: 115/90. Pulse: 52 and irregular. The skin was warm, dry and clear. The head and neck were negative except for mild periorbital edema and injection of the conjunctivae. The fundi and pupils were normal. The pharynx, ears and thyroid were normal and the lungs were clear. On examination of the heart the apical impulse was 9.5 cm. to the left of the mid-sternal line in the fifth interspace. There was a predominantly irregular slow rhythm with frequent premature beats occurring in short runs of 2-3 beats. The first sound at the apex was slurred but no murmurs were audible. The second aortic sound was greater than the second pulmonic sound. The abdomen was negative. Neurological examination and the examination of the pelvis and rectum were normal. A complete blood count, urinalysis, blood sugar and NPN were normal. The electrolytes were normal on admission, but the serum-potassium fell from an initial 3.9 meq/L to 3.2 meq/L the day after admission. Despite the administration of 4.0 grams of potassium chloride daily and moderate amounts of orange juice the serum potassium was 3.0 meq/L on September 25 and 3.4 meq/L on September 26. Thereafter the level returned to normal.

A chest X ray was normal except for minimal pleural scarring at the left base. The electrocardiogram showed the following serial changes:

September 22: Ventricular rate: 45-100 averaging 70 min. There was a generally irregular rhythm

due to wandering of the atrial pacemaker, periods of sinus arrest with nodal escape, and premature nodal beats. In addition there were the ST and T changes of digitalis effect and shortening of the QT Interval. (Fig. 1)

September 23. Rate 76. 1° heart block, ST and T changes and mild irregularity due to wandering of atrial pacemaker were present. (Fig. 2)

September 25. Rate 82. The PR Interval was 0.19 and the ST and T changes persisted. (Fig. 3)

September 30. Rate 78. The PR Interval was 0.17 and ST and T changes of digitalis effect were still present. (Fig. 4)

October 11. The electrocardiogram was completely normal.

Initial therapy consisted of pronestyl 200 mgm. IM q 4 h in an attempt to control the ventricular arrhythmia; sparine 50 mgm. I M q 4 h to control the nausea and vomiting; and intravenous saline and potassium chloride. The nausea and vomiting improved within six hours and ceased within eighteen hours after admission. The premature ventricular beats disappeared within eight hours and the sinus arrhythmia disappeared within seventy-two hours. After subsidence of the nausea and

vomiting she was placed on a low carbohydrate diet (C 125, P 100 and F 80), potassium chloride gr x q 4 h, and orange juice.

Discussion

On admission to the hospital the patient manifested several of the cardinal signs and symptoms of digitalis intoxication, namely nausea, vomiting, paresthesiae, and a slow predominantly irregular rhythm with frequent premature beats occurring in short runs of 2-3 beats. The electrocardiogram revealed a varying rhythm with a wandering atrial pacemaker, short periods of sinus arrest with nodal escape, and frequent premature ventricular beats. ST, QT, and T wave changes characteristic of digitalis were also plainly evident. Surprisingly, in view of the long duration of action of digitoxin, the electrocardiogram two days after the ingestion of digitalis and one day after institution of therapy revealed only 1° heart block and wandering of the atrial pacemaker in addition to the ST, QT, and T wave changes expected after digitalization. The arrhythmia had cleared completely three days after admission and the electrocardiogram had reverted to normal twenty days later.

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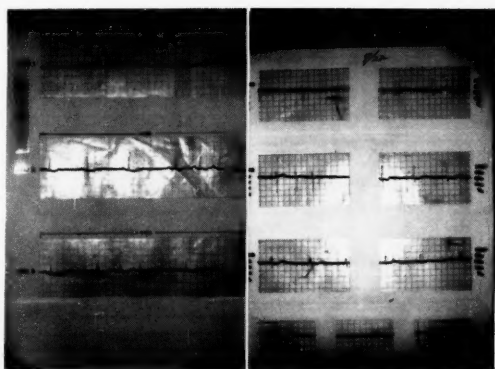


FIGURE 1

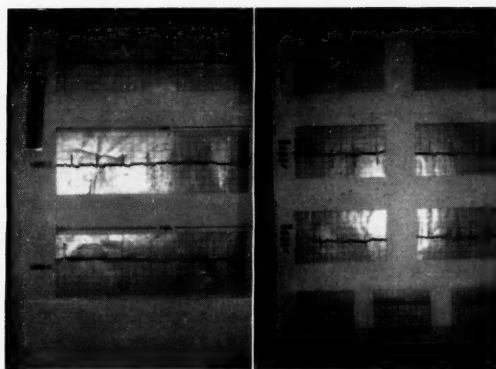


FIGURE 3

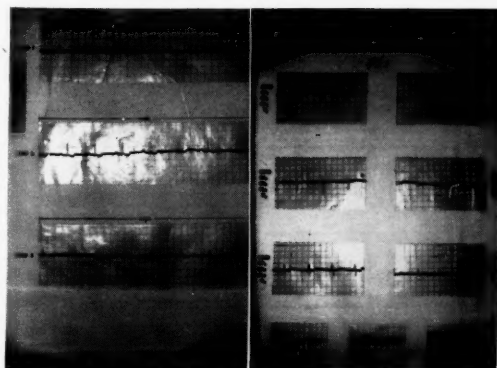


FIGURE 2



FIGURE 4

The inter-relationship between digitalis intoxication and hypokalemia has been well documented by Sampson et al² and by Lown et al³ and is now widely accepted. The relationship between digitalis intoxication and carbohydrate ingestion was well demonstrated by Page, who was able, by carbohydrate administration, to repeatedly induce ventricular arrhythmias in a group of seven patients who were at, or near, the point of digitalis intoxication.⁴

Insulin produced hypoglycemia is frequently associated with hypokalemia and the characteristic electrocardiographic changes of hypokalemia (T-Wave inversion and QT Interval prolongation). Parrish et al corrected these electrocardiographic changes by the administration of potassium alone.⁵ Lown et al precipitated digitalis intoxication by the administration of glucose and insulin and observed that concomitantly with the appearance of the arrhythmia the serum potassium fell from 4.1 to 3.0. Administration of potassium acetate corrected the cardiac manifestations of digitalis intoxication and the serum potassium changes without affecting the serum glucose concentration. These observations strongly suggest that digitalis intoxication occurring after carbohydrate ingestion is not related to changes in the blood sugar level *per se*, but rather is related to the hypokalemia which occurs when potassium moves into the hepatic cells as glycogen is deposited.

In view of the above clinical and experimental findings the patient was placed on a low carbohydrate diet with supplementary potassium chloride. Pronestyl was given in an effort to control the frequent premature beats and to prevent the development of a serious ventricular arrhythmia. Although it is difficult to evaluate the role of any of the therapeutic measures, the rapid improvement in the electrocardiographic and clinical picture, despite the long duration of action of digitoxin, suggests that the treatment was beneficial.

SUMMARY

A case of acute massive digitoxin intoxication is reported. The patient exhibited the classical clinical signs of digitalis intoxication and the electrocardiogram revealed a wandering atrial pacemaker, sinus arrest with nodal escape and frequent premature nodal beats. The signs and symptoms cleared within four days after the institution of therapy with pronestyl, potassium chloride, and a low carbohydrate diet.

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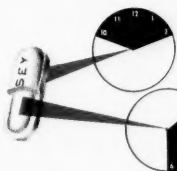
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THE FETICH OF DISINFECTION*

CHARLES VALUE CHAPIN, M.D.

DISINFECTION in this connection refers to that sort which is commonly carried out by health officials after death, or recovery, from contagious diseases. The paper has no reference to that continuous attention to cleanliness — "medical antiseptics" the French call it — which is desirable in the management of contagious cases. This terminal disinfection, if one may so call it, occupies a high place in public sanitation. A reader of works on hygiene would conclude that disinfection is held in equal esteem with isolation, or is perhaps of even more importance, for it is sometimes expected to work wonders in the prevention of disease where there has been no isolation as, for instance, the official disinfection after a case of tuberculosis when for years there may have been no attempt on the part of the patient to prevent the infection of others.

Official disinfection costs money and is annoying. Its only excuse is that it is believed to be an important factor in preventing disease. But is it an important factor, and is its practice based on good evidence of its necessity and value? It is to be feared that it is not. We disinfect not because the utility of the process has been demonstrated, but because of precedent and authority. There can be little doubt that disinfection had its origin at a time when disease was believed to be the work of demons. Burnt sacrifices and fumigations with aromatics were among the means employed to appease the supernatural powers. The early practice of medicine was confined to the priesthood, and the final cleansing of the sick was largely a religious ceremony. This cult of purification by fire and smoke and libations has continued even to modern times. The attempt to give it a scientific basis is an afterthought.

Several arguments are advanced by the advocates of disinfection in support of the practice. Disinfection is necessary, it is claimed, because the virus of the disease becomes attached to material things, such as clothing, books, toys, furniture, and the walls and woodwork of rooms. On these things, it is said, it retains its life for weeks and months.

*An address to the American Medical Association, at Boston, Massachusetts, June, 1906. First published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 47:574-577, August 25, 1908.

and these infected things are, therefore, a very important factor in the extension of the contagious diseases.

That this is so is believed because numerous cases are on record in which infected things are assumed to have caused sickness. Now, just here, I wish to make myself perfectly clear. I would not, in the present state of our knowledge, for a moment deny that clothing, books, and even a room itself may be infected and may remain so for a considerable time, and then give rise to a fresh outbreak of disease. What I do claim is that reports of such modes of infection are rarely well authenticated, and even if it is admitted that such infection occasionally takes place, there is no evidence that this is a factor of any moment in the extension of the contagious diseases, while there is a great deal of evidence that it is a factor of no consequence at all.

In most of the cases of alleged infection by fomites the fact is not proven at all; at best it is a possibility merely, not even a probability, and certainly far from a demonstration. The majority of cases of contagious disease cannot be traced with certainty to their origin. Because a certain case develops soon after exposure to a supposedly infected article is no proof that it was due to such exposure. As will be shown later, direct exposure to infected persons is the probable source of the infection in most cases of contagious disease. Unless the source of the infection can be fairly well excluded, it is merely an assumption to attribute the infection to things. A more critical examination of these cases would eliminate most of their value as evidence. After all, instances of apparent infection by fomites are rare. In my own experience of twenty-two years as health officer, I have met with few of them, even in the earlier years of my practice, when I must confess I looked for them more carefully than I do now, since I have become satisfied of their unimportance. Doubtless all health officers will agree with me as to the rarity of cases in which it appears probable that fomites are the source of infection. Certainly no one could develop by induction, from their frequency, the theory that the contagious diseases extend chiefly in this way. It will not be claimed that

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I-Lysine HCl	300 mg.
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THE FETICH OF DISINFECTION

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the health officer practices disinfection because compelled to it by the frequency with which cases of fomites infection are brought to his notice. It is done for other reasons.

Probably one reason why so much importance is attached to *thing* infection is the large amount of discussion which is given to the question of the viability of bacteria outside the body. Everybody has heard that anthrax and tetanus spores live for years, and though it is generally recognized that most of the common disease germs do not belong to the spore-forming class, the great vitality of these exceptional types has had its psychologic effect. Bacteriologists have been very apt to report instances of maximum vitality of the organisms of pneumonia, diphtheria, plague, and the like, but it is generally forgotten that these are the exceptions, and the impression remains that most of the bacteria given off from the sick retain their vitality and virulence for a long time, which is certainly not the fact.

But undoubtedly there is another and chief reason why the belief has become so well established that the virus of disease remains long attached to things, that these fomites are a most important source of infection, and that the contagious diseases can only be successfully combated by ter-

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minal disinfection. As was before stated, it has rarely been possible to trace more than a small proportion of cases of contagious disease to direct contact with others. Even in country places, cases are constantly appearing without any visible connection with a previous case. In cities it is still more difficult to trace direct exposure to the sick and, so far as can be determined by routine examination, the majority of cases of scarlet fever and diphtheria appear to arise spontaneously, or sporadically, as it was formerly called. Even in smallpox, which owing to its marked eruption and comparative rarity is easier to trace than almost any other disease, a large portion of cases appear to have no connection with previous cases. To explain the origin of these cases has been the chief problem of sanitary science. At one time it was believed by many that the virus of most of the contagious diseases could develop outside of the body; hence, the filth theory of disease which, although now entirely discredited, still has great influence, even among sanitary officials.

The hypothesis which next appealed to workers in this field was that the specific virus, though incapable of growing outside of the body, could yet retain its vitality for a considerable time and, attached to various articles, be carried unnoticed to great distances. It must be admitted that this is a very natural and reasonable hypothesis, and is supported by many of the findings of bacteriology and by certain clinical observations. A dozen years ago it was really the only working theory that we had. Of course, if its probability is admitted, disinfection must necessarily follow. This, I take it, is the true reason why for so many centuries disinfection has played such an important part in preventive medicine. It was the only means for controlling that mode of infection which appeared to be the principal factor in the maintenance of the contagious diseases.

Disinfection had its origin in superstition, and its practice so partakes of the character of magic art that it catches the popular fancy. Even if the health officer does not disinfect, the infected family is quite likely to sprinkle a little sulphur on the stove, or place a saucer of chloride of lime behind the door. Thus unconsciously do we follow the customs of our remote ancestors who exorcised the demon of disease with incense and incantation. Here we have another explanation of the vogue of disinfection.

Let us now examine into the principal scientific argument in favor of disinfection, i.e., *that infection is spread chiefly by things*. As was before stated, this theory was the outcome of the attempt to explain the origin of that vast number of cases of contagious disease which could not otherwise be accounted for. But within the last dozen years

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THE FETICH OF DISINFECTION

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a multitude of facts have come to light which renders this theory unnecessary. It has always been recognized that mild and atypical cases of contagious disease are occasionally seen. Scarlet fever without eruption, mild sore throat diphtheritic in nature, and walking cases of typhoid fever were mentioned by the older writers; but they were not believed to be common, and little account is taken of them in the textbooks. Today the majority of physicians are skeptical about the diagnosis when they see an almost afebrile scarlet fever with slight, fleeting rash, or diphtheria without exudation and the patient not confined to the bed; yet those who have studied these diseases most closely, know that the mild atypical cases are extremely common. Even in smallpox a disease with more characteristic symptoms than any other, mild unrecognized cases are very numerous. If one examines the reports of health officers of the past few years, it will be found that the frequency of these mild cases is dwelt on, and to them is attributed the origin and maintenance of most of the local outbreaks. The report on typhoid fever during the Spanish war indicated that mild unrecognized cases were twice as numerous as the recognized cases. In investigating this disease in a small rural community, Koch found scores of cases which the attending physicians failed to recognize, or to which no physician was called. Instance after instance is recorded in which a mild sore throat has been the starting point of an outbreak of diphtheria. In Hartford, of 2,038 apparently benign sore throats found in children at school, 29 per cent were shown to be true diphtheria. The English, who often isolate as high as 90 per cent of their recognized scarlet fever cases in hospitals, and nevertheless continue to have as much of this disease as we do, attribute their failure to control the disease to the existence of so many mild unrecognized cases. We now know that there is a vast number of atypical, unrecognized cases

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of contagious disease, sometimes exceeding in number the known cases.

We have learned that there is still another factor to be reckoned with. It is now well known that the pathogenic bacteria often grow in human beings without producing any symptoms of the disease. After recovery, the specific bacteria may continue to develop for weeks, months, and even years. Not only that, but they are found also in persons who have never been sick at all. These are what are called carrier cases and present no symptoms. They are even more numerous than the mild cases of illness. Such carriers have been found for diphtheria, influenza, cerebrospinal meningitis, typhoid fever, cholera, the plague, and many other diseases, and the wide distribution of the pneumococcus is known to everybody. In the protozoan diseases, as malaria, trypanosome diseases, and Texas cattle-fever, individuals often carry the infection in the blood and show no symptoms. These facts receive scant recognition in most textbooks, even those on bacteriology, and are entirely ignored by nearly all writers and lecturers on clinical medicine and sanitation, yet they are of the utmost significance. In mild cases and with living carriers we have the real source of contagious disease.

This whole question may be summed up very concisely. Which is the more likely to be the chief factor in the extension of contagious disease: inanimate objects hypothetically infected with dying bacteria, or living and moving human beings who are continuously throwing off living bacteria? It must be admitted that fomites may occasionally spread disease; but, if we reflect how unlikely infected things are to be brought in contact with people and how great the chance of human beings coming in contact with each other, it seems very unlikely that fomites can have appreciable effect in the spread of disease.

If then, as all evidence tends to show, contagious diseases usually extend by means of pretty direct contact between the infected and the noninfected and transmission by fomites has little influence on such extension, it follows that even the most thorough disinfection will have little effect in checking these diseases. There is certainly no rational basis for making it such an important feature in public health work, and holding it of equal value with isolation.

Another thing to be borne in mind in connection with this subject is that a good deal of disinfection does not disinfect.

It may be asked: What objection can there be to disinfection even if it is not so important as has been thought? Aside from the question of expense, which is by no means unimportant, there is a decided objection. The confidence which the public has in the efficacy of disinfection is the greatest

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DISTRICT MEDICAL SOCIETY MEETINGS

WASHINGTON COUNTY MEDICAL SOCIETY

The quarterly meeting of the Washington County Medical Society was held at the Larchwood Inn, Wakefield, Rhode Island, on 8 April, 1959. The meeting was called to order by the president, Doctor Menzies, at 11:00 A.M.

The following members were present: Doctors Agnelli, Burbelo, Capalbo, Celestino, Cerrito, Dewees, Eckel, Hathaway, Jones, Manganaro, McGrath, Menzies, Morrone, MacIver, Masyk, Murray, Nathans, Phelan, Robinson, Ruisi, Spicer, Tang, Turco, Walsh, Tatum.

Two members deceased since last meeting, Doctor Henry B. Potter, of Wakefield, and Doctor Arthur Roberge of Quonset Naval Station.

UNFINISHED BUSINESS: The subject of listing in the telephone book was discussed by the executive committee. The committee suggested to the Society that the listings by specialty was permitted providing the specialty was one of those listed by the Rhode Island Medical Society. The executive committee disapproved of listings in telephone books other than those that serve the community in which the physician is practicing as this would institute advertising. It was brought up that there are a few cases in which cross listing is necessary because the physician is actually practicing in both communities. In view of this a motion was made by Doctor McGrath and seconded by Doctor Cerrito that the president of the Society look into the selected cases in which more than one listing is necessary and that the president be granted the power to permit this listing in selected cases when he deems necessary. This motion was carried. There was no motion on the question of listing by specialty but the discussion revealed that the consensus was that listing by specialty be permitted providing the physician is listed as a specialist in the Rhode Island Medical Society list. This listing is the *Roster of Members* of the Rhode Island Medical Society issued in January, 1958.

Under unfinished business the question of a questionnaire that was sent to the members of the Society concerning the problem of emotionally disturbed and mentally retarded children was discussed and the members were asked to send in the questionnaires they receive and so help the Society

to evaluate the problem in this community.

The application of Doctor MacIver was unanimously approved and Doctor MacIver was appointed to the Washington County Medical Society. Doctor Tatum reported on the financial status of the Society.

Bills before the House and Senate were discussed and the Society was in agreement with the Rhode Island Medical Society concerning all of these bills.

A bill, S343, which in effect would exempt physicians from jury duty was roundly discussed. It is the opinion of the House judiciary committee that physicians should serve as jurors and with the exception of one or two members of the Washington County Medical Society it was the opinion of this body that physicians should serve as jurors whenever they are called.

The question of publicity in the form of news releases under the Washington County Medical Society concerning polio immunization was discussed. A motion was made by Doctor Agnelli that the Washington County Medical Society pay for advertisements concerning this, but the motion was not seconded and the feeling of the Society was that news releases be given to the newspapers and radio by the officers of the Society urging that all individuals be immunized and that booster shots be also urged when recommended by the family physician.

A motion was made by Doctor Agnelli and seconded by Doctor Cerrito to adjourn.

Scientific section: Doctor Russell R. Hunt spoke on *The Problem of Radiation*.

Respectfully submitted,

FREEMAN B. AGNELLI, M.D., *Secretary, pro tem*

KENT COUNTY MEDICAL SOCIETY

The meeting of the Kent County Medical Society was called to order at 9:10 P.M. on March 24, 1959, at Kent County Memorial Hospital. A symposium on *Cardiac Catheterization and Angiocardiography* was presented by Lester Vargas, M.D.; Frank Merlino, M.D., and Thomas Forsythe, M.D. Rapid strides in cardiac surgery have made accurate diagnosis important. The technique, evaluation, and X-ray findings of cardiac catheterization and angiocardiography in cases of congenital heart disease

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RHODE ISLAND MEDICAL JOURNAL KENT COUNTY MEDICAL SOCIETY

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were well presented and illustrated.

Thirty-five members and guests were present. Minutes of the December 10, 1958, meeting were read and approved. The committee reported that the cost of a trunk line for a Kent County phone answering service would be prohibitive. The Valley Answering Service was reported to have improved its service. Doctor O'Hanian moved that the secretary ascertain from the Rhode Island Medical Society the policy regarding appointing an advisory committee to the National Foundation or any other such "health foundation or society." The motion was seconded by Doctor Merrill, and following general discussion, was passed.

Doctor Hardy suggested that if no notice were sent by the state Society regarding the Benevolence Fund, that a notice should be sent to all members of our society advising a donation.

Doctor Merrill polled the membership of the Kent County Medical Society as follows: Do you favor M.D.'s being able to be under Social Security? Yes 38. Plus 2 qualified Yes 40. No 14. Plus 1 qualified No 15.

Doctor Merrill then moved that:

- (1.) The delegates of the Kent County Medical Society be instructed to request that the Rhode Island Medical Society be polled on the following question:

Should the United States Congress pass legislation to include Doctors of Medicine in Social Security? Yes or No?

- (2.) That the delegates to the A.M.A. from the Rhode Island Medical Society be instructed to raise the question at the A.M.A. meeting and vote there according to the wishes of the majority in the state poll.

The motion was seconded by Doctor Erinakes and passed unanimously.

There was a discussion regarding increasing attendance at meetings by having 4:00 P.M. meetings and dinner meetings.

A committee to arrange the annual clambake for the June meeting was appointed as follows: Jean Maynard, M.D., Peter Koch, M.D., and Joseph Wittig, M.D.

The meeting was then adjourned.

Respectfully submitted,

RUSSELL P. HAGER, M.D., *Secretary*

Monday, October 5 at 8:30 P.M.

**Providence Medical Association
Meeting**



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A.M.A. Members to Get Four Publications

As the result of approval by the A.M.A. House of Delegates, each A.M.A. member will now get TODAY'S HEALTH in addition to the JOURNAL OF THE A.M.A., a specialty journal of the member's choice, and the bimonthly A.M.A. NEWS.

Every doctor will get a direct mailing from Chicago making inquiry as to the specialty journal he wishes to have in addition to the JOURNAL OF THE A.M.A. Until now the member had his choice of either the journal or a specialty publication. The new ruling gives him both.

The ten optional specialty publications are the Archives of: Internal Medicine, Dermatology, Neurology, General Psychiatry, Pathology, Surgery, Otolaryngology, Ophthalmology, and Industrial Health, and the Journal of Diseases of Children.

R. I. Neurological Society Affiliates with American Psychiatric Association

During the summer the Rhode Island Neurological Society voted to become a district branch of the American Psychiatric Association. New officers of the branch are Dr. Melvin Johnson, president; Dr. David Fish, vice president; Dr. Robert Hyde, secretary, and Dr. Sidney Goldstein and Dr. Laurence Senseman, councillors. The Rhode Island Neurological Society will by this action function as a parallel organization with the already existing district branch of the A.P.A.

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Rhode Island Host to New England Medical Librarians

The New England Regional Group of Medical Librarians will meet at the Library of the Rhode Island Medical Society on October 30 and 31. A luncheon session on the 30th will be followed by an afternoon of lectures, and then a banquet in the evening. A workshop program and business meeting is scheduled for Saturday morning. The meeting will mark the first time the group has met at the Medical Library here.

Use of Local Hospitals Ruled by Health Department

Doctor Jeremiah A. Dailey, state director of health, issued a ruling this summer that medically indigent patients cannot be referred to hospitals outside the state for treatment, without authorization from the Department of Health. If the facilities for treatment are available in Rhode Island these patients must be referred to local hospitals if payment is to be made by the Department, Doctor Dailey reported. If there is an exceptional case which cannot be treated locally, the physician must receive authorization from the Department before referring the patient out of state.

New Englanders in Medical Schools

New England as a region is below the national average in the number of its residents entering medical schools.

This fact is revealed in a study recently conducted by the New England Board of Higher Education which compares the average ratio of students per 100,000 population from each state entering medical schools from 1948 to 1958.

Of the six states in the region, only Vermont exceeds the national average of students entering medical schools and it ranks fourth in the nation. It is the only state in New England with a publicly supported medical school.

Connecticut, which ranks nineteenth in the country, is at the national average. Massachusetts is twenty-ninth, Rhode Island thirty-seventh, New Hampshire forty-second, and Maine forty-seventh.

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THROUGH THE MICROSCOPE

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Matching Gifts for Hospitals Program

A *Matching Gifts for Hospitals* program, believed to be the first of its kind, has been established by the Smith Kline & French Foundation.

Under the program, the Foundation will match — up to \$2,000 — the contributions to accredited hospitals by employees of Smith Kline & French Laboratories, Philadelphia pharmaceutical firm. The plan parallels the Foundation's *Matching Gifts for Education* program which was established in 1956, and which has brought \$98,760 to accredited colleges, universities and independent secondary schools since its inception.

In order for hospitals to receive support under the program, they must be accredited by the Joint Commission on Accreditation of Hospitals and must be located within the United States or its possessions. No distinction is made between privately endowed or tax supported hospitals, except that the institution must be one to which contributions are deductible under the Internal Revenue Code.

Recipients may use contributions for augmenting required capital and general operating funds, providing expanded medical and surgical care for the treatment and maintenance of the sick and injured, increasing medical facilities and equipment, and improving incentives for the highest quality of professional medical care.



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A.M.A. Declares Warnings Needed on All Hazardous Chemicals

Warnings on the labels of all products containing hazardous chemicals was declared today as the objective of a model law formulated by the American Medical Association and recently introduced into Congress (H.R. 7352).

Speaking before the Association of Food and Drug Officials of the United States, in Boston, Bernard E. Conley, Ph.D., Chicago, secretary of the A.M.A. Committee on Toxicology, declared "If we are to educate people to read labels and obey their warnings, we must require identification of hazardous ingredients on all products, not merely on certain classes of chemicals such as pesticides."

Half of all substances causing accidental injury and death are not required by law to carry precautionary labeling. Many of these are used in the home, in small businesses and in other areas where control of harmful exposures is not as guarded as in the manufacturing process.

While three quarters of these products contain substances which are moderately toxic or worse, most states and the federal government have no laws to require them to carry warnings or to declare toxic or other hazardous constituents, Dr. Conley declared.

There has been a growing acceptance of the need to label hazardous household chemicals. Examination of over 1,000 varieties of products revealed that chemicals used in commercial establishments, such as hotels, garages, laundries and restaurants, need the benefit of labeling as greatly as those entering the home.

Dr. Conley discounted the claim that wide use of precautionary labeling would bring about eventual disregard of all warnings. The widespread use of danger and warning signs for transportation and traffic hazards has never been considered a deterrent to safety. No one ever suggested that our mounting motor accident statistics are due to the number of safety signs about them; rather the growing number of auto accidents is related to the increasing number of motor vehicles. The same basic factors underlie the problem of accidental poisoning by hazardous chemicals.

**Foreign Student Total in America
Up 38% in Five Years**

The number of foreign students studying in the United States has increased 38% in the last five years, the Institute of International Education reported in a survey released recently.

The 47,245 students from 131 countries registered in U.S. colleges and universities this year represent a 9% increase over the number last year and an 86% increase over that of the academic year 1948-49. According to all available statistics the current figure represents the largest foreign student population in any country of the world.

The postwar period has also produced a great spurt in the exchange of university teachers and scholars, the Institute revealed in its fifth edition of *Open Doors*, an annual statistical report on educational exchange. In five years, the number of foreign professors teaching in our schools has tripled. American colleges and universities reported 1,937 foreign faculty members this year, in comparison to 635 in 1954-55. With 1,842 American faculty abroad, this was the first year on record that we "imported" more professors than we "exported."

The *Open Doors* survey on foreign physicians showed a new high of 8,392 doctors from 91 countries in training here this year—an increase of 10% over last year and 65% over five years ago. The Far East again sent the largest number, with the Middle East showing the greatest increase—25% more doctors than last year.

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hindrance to the development of better methods of handling disease and guarding against infection. To practice strict personal cleanliness, not only in the presence of contagious disease but at all times, is the sole mode now known by which the unrecognized cases and the carrier cases can be guarded against. The public, and even the medical

profession, refuse to believe in infection in well persons, but cling to the old notion that it is things, not persons, that are to be feared. And they will cling to this view so long as health officials lay so much stress on their official disinfection. Many a time a family has lived for months with a consumptive who has taken no precautions about his sputum, and after his death has promptly asked to have the house fumigated. The expiatory sacrifice of disinfection is believed to atone for every sanitary sin. It is our duty to teach that hygienic salvation can only be attained through the good works of personal cleanliness. As the surgeons have given up antiseptics for asepsis, so the health officer must substitute cleanliness for disinfection.

KAPOSI'S SARCOMA

concluded from page 591


⁶Philippson, L.: Ueber das sarcoma idiopathicum cutis Kaposi: ein beitrag zur sarcomlehre. Virchows Arch. f. path. Anat., 167:58, 1902

⁷Babes, V.: In Ziemssen's Handbook der speziellen Pathologie und Therapie. Leipzig, F.C.W. Vogel, 1884, vol. 14, part 2, p. 473


⁸MacKee, G. M. and Cipollaro, A. C.: Idiopathic multiple hemorrhagic sarcoma (Kaposi). Am. J. Cancer, 26:1, 1936

⁹Ronchese, F. and Kern, A. B.: Lymphangioma-like Tumors in Kaposi's Sarcoma, A.M.A. Arch. Dermat. & Syph. 75:418-427, (March) 1957

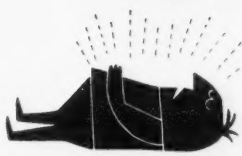
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BOOK REVIEWS

YOUR MIND CAN MAKE YOU SICK OR WELL by Curt S. Wachtel, M.D. Prentice-Hall, Inc., Englewood Cliffs, N.J., 1959. \$4.95

Dr. Wachtel's book deals, as many others do, with difficulties in the psychosomatic field. He uses his forty years' experience with patients for the education of the layman, or, what he calls "the man in the street." Accurate observations, a keen sense of humor and a smooth conversational tone make for easy reading.

The author's self-treatment is based on the use of the well-known *life chart*, in which the patient correlates his age, education, significant life situations, illnesses, accidents, etc., with his physical complaints. This process is supposed to help him with the realization of motives for his complaints.

The book may be helpful to a few psychoneurotics, but, in my experience, the general bulk of patients of this type are not relieved of their symptoms by a purely intellectual insight in their problems and require the security of doctor-patient relationship. Doctor Wachtel is well aware of it himself, as he treats some of his patients for years. From the psychiatric point of view I find the book too directive.

I feel that this book may be helpful to a medical doctor in the treatment of hypochondriacal patients by providing him with numerous striking case histories for them and giving him a good insight into the psychological mechanism of conversion and psychophysiologic stress reactions.

C. ZOURABOFF, M.D.

FUNDAMENTALS OF OTOLARYNGOLOGY. A Textbook of Ear, Nose and Throat Diseases by Lawrence R. Boies, M.D. W. B. Saunders Company, Phil., 1959. 3rd ed. \$8.00

Here is a new third edition of an already well-known and widely accepted teaching text on the management of ENT problems seen in daily practice. There have been many recent developments in otology, in the fields of hearing conservation and surgical restoration of hearing. Regarding the latter, the use of the operating microscope to mobilize the stapes is discussed. Other new chapters added are those on maxillofacial injury, reconstructive

nasal surgery, tumefaction of the neck, and disorders of the salivary glands. These, like the chapters from the earlier editions, are well illustrated and the material presented in an interesting and concise manner.

This edition is recommended to the nonspecialist in ENT who wishes to keep his library up to date.

FRANCIS L. McNELIS, M.D.

HEARING: A HANDBOOK FOR LAYMEN by Norton Canfield, M.D. Doubleday & Co., Inc., Garden City, N.Y., 1959. \$3.50

Every physician, whether he be general practitioner, pediatrician, internist, otologist, psychiatrist, or surgeon, may have some interest in this book since it portrays so vividly the emotional and physical results of impaired hearing from the cradle to the grave. This book can be read by laymen, and is written for them, but should be read by every practitioner of medicine who wants to understand the problems of the patient who has to put up with impaired hearing.

The chapters on parent-child relationship as well as those on the senior citizen are excellent and typical of the way in which this book has been prepared. The use of artificial aids and an employment of surgery in correcting some of the hearing deficiencies is dealt with, and not the least of all of this is the chapter written for those who live with those impaired. Even the problems of industry are brought up. This is an important concept for the future.

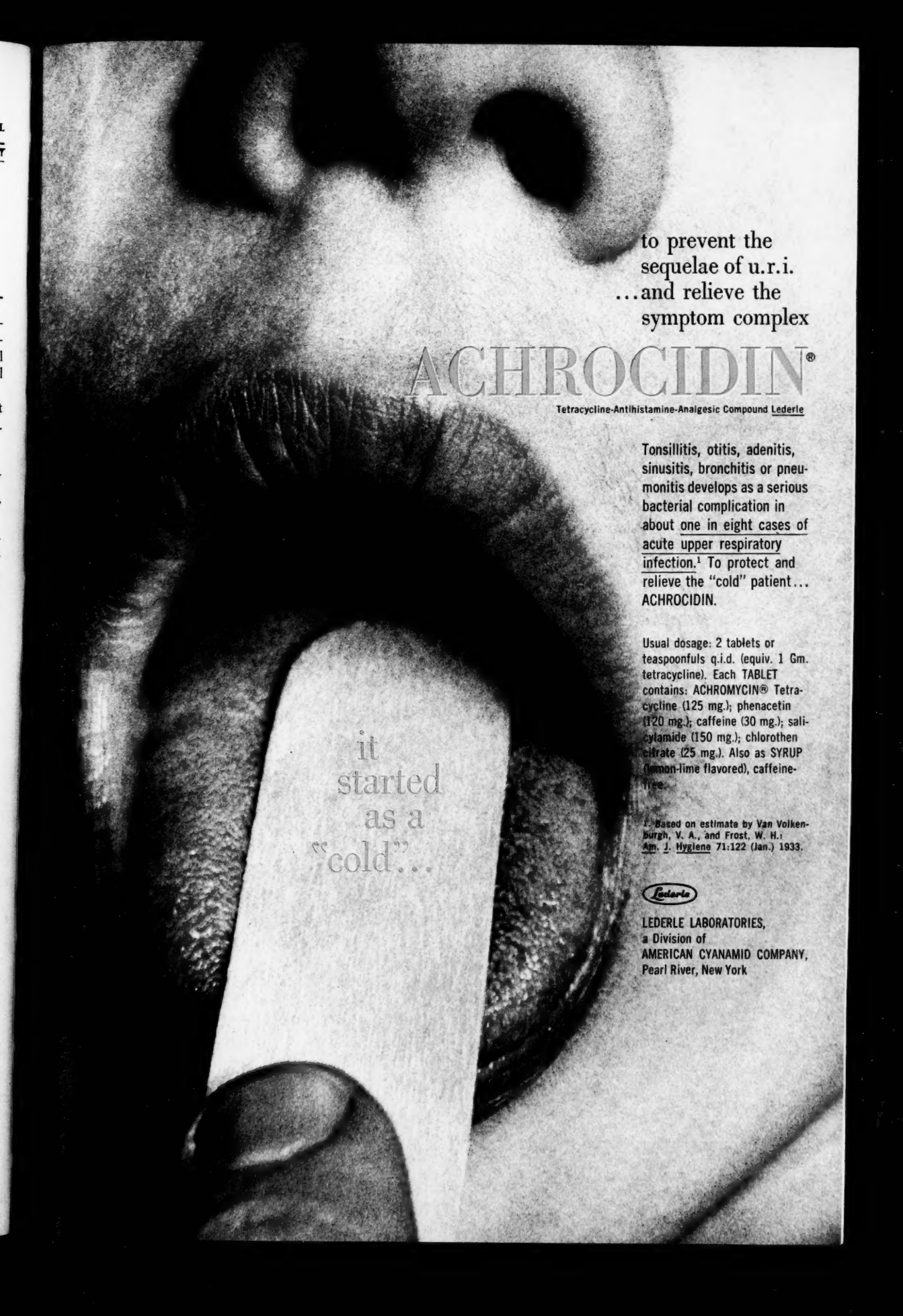
Doctor Canfield has done an excellent job in preparing this book which was written for laymen, but which will be most enjoyed I am sure by doctors.

RUDOLPH W. PEARSON, M.D.

THAT THE PATIENT MAY KNOW. An Atlas for Use by the Physician in Explaining to the Patient, by Harry F. Dowling and Tom Jones, assisted by Virginia Samter. W. B. Saunders Co., Phil., 1959. \$7.50

This book will help the patient-physician relationship considerably. Decades ago, or even now outside of the United States, the patient would not have dared to insist on so many why's.

concluded on page 616



to prevent the
sequelae of u.r.i.
...and relieve the
symptom complex

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¹ Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933.

it
started
as a
"cold"...



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BOOK REVIEWS

concluded from page 614

Many patients ask for and are entitled to an explanation. They are happy if the physician gives one by showing pictures in textbooks or by writing down complicated names, that cannot be grasped from the spoken words.

Since a diagram is much easier to understand, the book is entirely made up of diagrams. It is intended for the physician's desk in order to make somewhat clearer to the patient the intricacies of normality, pathology and therapy.

The charts on nutrition, metabolism and growth are particularly useful. The technique of insulin injections is well explained. I prefer straight clip-pers to paper-scissors for cutting diabetic nails.

The title is not one hundred per cent clear. It may give the layman the impression of a book of knowledge. Perhaps it would have been better to reverse the title and subtitle.

F. RONCHESE, M.D.

A DOCTOR DISCUSSES MENOPAUSE by G. Lombard Kelly. The Budlong Press, Chic., 1959. Patient Price \$1.50

This is a small, concise book which may well be

RHODE ISLAND MEDICAL JOURNAL

given by doctors to their patients in their forties. If women (and husbands) had the knowledge and understanding to be gained by reading this little book, they would live much happier, better adjusted lives.

Not only are the physical aspects of the menopause explained intelligibly, but, also, the emotional and sexual problems of a woman in her middle forties are discussed.

A few simple pictures and charts such as the reproductive organs and hormones governing them, ovulation temperature charts, exercises for keeping trim and self-examination of the breasts add much to the book's value.

Complimentary desk copies are available to physicians who write on their own stationery to: Budlong Press, 5428 North Virginia Avenue, Chicago 25, Illinois.

MERLE M. POTTER, M.D.

Wednesday, October 7 at 8:00 P.M.

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DATES YOU SHOULD CHECK

(Mark your calendar now for the dates applicable to you)

Friday, October 16, and Saturday, October 17

New England Surgical Society, at Wentworth-by-the-Sea, New Hampshire.

Saturday, October 17

Dance. Woman's Auxiliary to Rhode Island Medical Society, Metacomet Country Club.

Friday, October 23, and Saturday, October 24

College of Physicians. Northeast and Eastern Canada Regional Meeting, at Providence (Sheraton-Biltmore Hotel).

Friday, October 30 and Saturday, October 31

New England Regional meeting, Medical Librarians, at Providence.

ALBERT H. MILLER—PHYSICIAN

concluded from page 585

- 14Gas-Oxygen Anesthesia: Indications for Its Use. New York Med. J. 99:181, January 24, 1914
- 15The Routine Administration of Ether in Measured Dosage. International Clinics, Philadelphia, Vol. 4, Series 24, pp. 250-256, 1914
- 16Nitrous Oxid-Oxygen Anesthesia: A New Apparatus. J.A.M.A. 63:1474-1475, October 24, 1914
- 17Mortality Under Anesthetics. American Yearbook of Anesthesia and Analgesia, p. 107, 1915
- 18Anesthetics of the Future. Providence Medical Journal 17:185, July, 1916
- 19Nitrous Oxid-Oxygen Anesthesia: With Description of a New Apparatus. Am. J. Surg. 30:7:86-89, July, 1916 (Anesthesia Supplement)
- 20Proposed Numerical System of Hospital Records. The Modern Hospital 7:3:185, September, 1916
- 21Anesthetic Records and Statistics of Anesthesia. Am. J. Surg. 31:4:50-54, April, 1917 (Anesthesia Supplement)
- 22Comparative Study of Blood Pressure in Anesthesia. Am. J. Surg. 31:10:120-122, October, 1917 (Anesthesia Supplement)
- 23Care of the Eyes of the Patient During Etherization. J.A.M.A. 70:2:83, January 12, 1918
- 24A New Inhaler for Nitrous Oxid Anesthesia. J.A.M.A. 71:109, July 13, 1918
- 25The Anesthetist's Day's Work. Am. J. Surg. 32:10:111, October, 1918 (Anesthesia Supplement)
- 26The Importance of Blood Pressure Observations in Surgical Prognosis. Boston Med. & Surg. J. 180:1:12-15, January 2, 1919
- 27The Influence of Age in Surgical Prognosis. Am. J. Surg. 33:10:112-114, October, 1919 (Anesthesia Supplement)
- 28Surgical Shock: Its Relation to Anesthesia. New York Med. J. 110:681, October 25, 1919
- 29Blood Pressure in Operative Surgery. J.A.M.A. 74:514-516, February 21, 1920
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- 31Blood Pressure Guides During Anesthesia and Operation. Pennsylvania Medical Journal 24:6:372-375, March, 1921
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- 33Anesthetic Units of Measurement. J.A.M.A. 77:433-435, August 6, 1921
- 34Pharyngeal Insufflation Anesthesia. J.A.M.A. 79:441-443, August 5, 1922
- 35Methods of Etherization. Anesth. & Analg. 1:4:19, August, 1922
- 36The Preliminary Examination of Patients Who Are To Undergo Surgical Operations. Anesth. & Analg. 2:4:156-158, August, 1923
- 37Obstetric Shock. Rhode Island M. J. 6:9:131-136, September, 1923
- 38Obstetric Shock. Anesth. & Analg. 3:1:23, February, 1924
- 39A Blood Pressure Paradox. J.A.M.A. 82:1511-1512, May 10, 1924
- 40Ascending Respiratory Paralysis Under General Anesthesia. J.A.M.A. 84:201-202, January 17, 1925
- 41Influence of Anesthesia on Respiration. Anesth. & Analg. 4:2:96, April, 1925
- 42Ideals and Ethics. Rhode Island M. J. 9:2:17-19, February, 1926
- 43The Influence of Demonstrable Cardiac Lesions on Surgical Prognosis. Anesth. & Analg. 6:1:29-30, February, 1927
- 44Postoperative Complications: A Comparison Between Ether and Nitrous Oxid in 5,000 Cases. Anesth. & Analg. 6:5:245-247, October, 1927
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- 47Post-operative Complications. II. Hysterectomy Compared with Appendectomy. Rhode Island M. J. 11:11:173-175, November, 1928
- 48At the Grave of William T. G. Morton on *Ether Day*. Anesth. & Analg. 8:1:9-10, January-February, 1929
- 49The Influence of Pharyngeal Anesthesia on Surgical Prognosis. Anesth. & Analg. 8:4:237-240, July-August, 1929
- 50A Report on Pharyngeal Anesthesia. Rhode Island M. J. 12:11:171-173, November, 1929
- 51Pre-operative Estimation of Surgical Risk. Rhode Island M. J. 13:6:81-83, June, 1930
- 52The Pneumatic Institution of Thomas Beddoes at Clifton, 1798. Ann. Med. History 3:3:253-260, May, 1931
- 53Anesthetics: Their Relative Values and Dangers. Fiske Fund Prize Essay, 1931. Rhode Island M. J. 14:9:5-51, September, 1931
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- 55Inhalation Anesthesia by a Gravitational Method. Anesth. & Analg. 11:2:52-53, March-April, 1932
- 56A Visit to the Birthplace of William Thomas Green Morton. Anesth. & Analg. 11:3:45, May-June, 1932 (Supplement)
- 57Constant Positive Pressure Nitrous Oxide Oxygen Anesthesia for Thoracic Surgery. J. Thoracic Surg. 2:3:296-301, February, 1933
- 58Technic of Oxygen Therapy. Rhode Island M. J. 16:3:38-42, March, 1933
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- 60Organization of the Anesthesia Service of the General Hospital. J.A.M.A. 101:1119-1121, October 7, 1933
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- 63The Diaphragmatic Respiration Recorded by a Synchronous Pneumograph. Rhode Island M. J. 19:5:59-61, May, 1936
- 64Surgical Prone Posture. J.A.M.A. 108:185-187, January 16, 1937
- 65Postoperative Pulmonary Complications. New England J. Med. 216:22:973-976, June 3, 1937
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- 68Anesthesia for the Benefit of the Patient: A Symposium. Rhode Island Med. J. 23:1:1-3, January, 1940
- 69Usher Parsons, Founder of Rhode Island Hospital. Rhode Island M. J. 23:168-173, October, 1940
- 70Surgical Posture: With Symbols for Its Record on the Anesthetist's Chart. Anesthesiology 1:3:241-245, November, 1940
- 71Technical Development of Gas Anesthesia. Anesthesiology 2:4:398-409, July, 1941
- 72Prelude to Surgical Anesthesia. Connecticut State M. J. 7:3:176-187, March, 1943
- 73Ether Anesthesia: Yesterday, Today and Tomorrow. Anesthesiology 8:5:471-478, September, 1947
- 74Anesthesia in Rhode Island. Rhode Island M. J. 31:1:37-41, January, 1948

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 Leonard Engel—THE OPERATION. McGraw-Hill Book Co., Inc., N.Y., 1958.
 Gabriel Fielding—EIGHT DAYS. William Morrow & Co., N.Y., 1959.
 Felix Marti-Ibanez—CENTAUR. MD Publications Inc., N.Y., 1958.
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 Katherine B. Shippen—MEN OF MEDICINE. Viking Press, N.Y., 1957.
 Harold Speert—OBSTETRIC AND GYNECOLOGIC MILESTONES. The Macmillan Co., N.Y., 1958.
 E. S. Turner—CALL THE DOCTOR. St. Martin's Press, Inc., N.Y., 1959.

Other purchases were:

- F. Denette Adams—PHYSICAL DIAGNOSIS. 14th ed. Williams & Wilkins Co., Balt., 1958.
 Bernard J. Alpers—CLINICAL NEUROLOGY. 4th ed. F. A. Davis Co., Phil., 1958.
 W. A. D. Anderson—SYNOPSIS OF PATHOLOGY. 4th ed. C. V. Mosby Co., St. L., 1957.
 Harry Beckman, editor—THE YEAR BOOK OF DRUG THERAPY. (1958-1959 Year Book Series.) Year Book Publishers, Chic., 1959.
 William Dameshek & Frederick Gunz—LEUKEMIA. Grune & Stratton, N.Y., 1958.
 Beth Day—NO HIDING PLACE. Pocket Books, Inc., N.Y., 1958.
 Michael E. DeBakey, editor—THE YEAR BOOK OF GENERAL SURGERY. (1958-1959 Year Book Series). With a Section on Anesthesia edited by Stuart C. Cullen. Year Book Publishers, Chic., 1958.
 DIRECTORY OF MEDICAL SPECIALISTS. Vol. IX, 1959. Marquis—Who's Who, Chic., 1959.
 Robert S. Gill—THE AUTHOR, PUBLISHER, PRINTER COMPLEX. 3rd ed. Williams & Wilkins Co., Balt., 1958.

Edwin S. Goodrich—STUDIES ON THE STRUCTURE AND DEVELOPMENT OF VERTEBRATES. 2 vols. Dover Publications, Inc., N.Y., 1958.

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George T. Pack & Irving M. Ariel, editors—TREATMENT OF CANCER AND ALLIED DISEASES. Vol. I—Principles of Treatment. Vol. II—Tumors of the Nervous System. Vol. III—Tumors of the Head and Neck. 2nd ed. Paul B. Hoeber, Inc., N.Y., 1958-59.

William D. Postell—APPLIED MEDICAL BIBLIOGRAPHY FOR STUDENTS. Charles C Thomas, Springfield, Ill., 1958.

Rhode Island Council of Community Services, Inc.—DIRECTORY OF HEALTH, WELFARE, RECREATION AGENCIES IN RHODE ISLAND. Prov., 1959.

Howard A. Rusk & others—REHABILITATION MEDICINE. C. V. Mosby Co., St. L., 1958.

J. E. Schmidt—REVERSICON. A Medical Word Finder. Charles C Thomas, Springfield, Ill., 1958.

E. A. Spiegel, editor—PROGRESS IN NEUROLOGY AND PSYCHIATRY. Vol. XIII. Grune & Stratton, N.Y., 1958.

SURGICAL FORUM. Proceedings of the Forum Sections, . . . Clinical Congress of the American College of Surgeons, Chicago, Ill. Vol. VI, Chic., 1956; vol. VIII, Chic., 1958.

Carl J. Wiggers—REMINISCENCES AND ADVENTURES IN CIRCULATION RESEARCH. Grune & Stratton, N.Y., 1958.

Robert A. Wise & Harvey W. Baker—SURGERY OF THE HEAD AND NECK. A Handbook of Operative Surgery. Year Book Publishers, Inc., Chic., 1958.

Review volumes from the Rhode Island Medical Journal were:

Ernest Aegerter & John A. Kirkpatrick, Jr.—ORTHOPEDIC DISEASES. Physiology—Pathology—Radiology. W. B. Saunders Co., Phil., 1958.

- D. G. Arnott—OUR NUCLEAR ADVENTURE. Its Possibilities and Perils. Philosophical Library, N.Y., 1958.
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- Callander's SURGICAL ANATOMY by Barry J. Anson & Walter G. Maddock. 4th ed., W. B. Saunders Co., Phil., 1958.
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- John W. Gofman—WHAT WE DO KNOW ABOUT HEART ATTACKS. G. P. Putnam's Sons, N.Y., 1958.
- George M. Lewis—PRACTICAL DERMATOLOGY. 2nd ed. W. B. Saunders Co., Phil., 1959.
- Moses Maimonides—THE PRESERVATION OF YOUTH. ESSAYS ON HEALTH. Translated . . . by Hirsch L. Gordon. Philosophical Library, N.Y., 1958.
- Richard Mathison—THE ETERNAL SEARCH. The Story of Man and His Drugs. G. P. Putnam's Sons, N.Y., 1958.
- Medical Department, U.S. Army—SURGERY IN WORLD WAR II. Orthopedic Surgery in the Mediterranean Theater of Operations. Office of the Surgeon General, Wash., 1957.
- Stanley D. Miroyiannis—501 QUESTIONS AND ANSWERS IN ANATOMY. Vantage Press, N.Y., 1959.
- NATO—EMERGENCY WAR SURGERY. U.S. Armed Forces Issue of NATO Handbook. U.S. Government Printing Office, Wash., 1958.
- Emil Novak & Edmund R. Novak—GYNECOLOGIC AND OBSTETRIC PATHOLOGY WITH CLINICAL AND ENDOCRINE RELATIONS. 4th ed. W. B. Saunders Co., Phil., 1958.
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- H. J. Roberts—DIFFICULT DIAGNOSIS. A Guide to the Interpretation of Obscure Illness. W. B. Saunders Co., Phil., 1958.
- Manfred Sakel—SCHIZOPHRENIA. Philosophical Library, N.Y., 1958.
- Peter J. Steincrohn—YOU CAN INCREASE YOUR HEART POWER. Doubleday & Co., Inc., Garden City, N.Y., 1958.
- Geza de Takats—VASCULAR SURGERY. W. B. Saunders Co., Phil., 1959.
- Robert Turell, editor—DISEASES OF THE COLON AND ANORECTUM. 2 vols. W. B. Saunders Co., Phil., 1959.
- Frank Wright—THE SEDIMENTATION RATE OF HUMAN ERYTHROCYTES. Vantage Press, N.Y., 1958.

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Gifts of periodicals were received from Doctors John T. Barrett, Irving A. Beck, Donald L. Denyse, Charles L. Farrell, Seebert J. Goldowsky, Manuel Horwitz, Walter S. Jones, and Louis I. Kramer.

Gifts of books from:

- Dr. C. Paul Bruno: BRISTOL, RHODE ISLAND. REPORT ON PUBLIC HEALTH SURVEY. January, 1959.
- Dr. Harold G. Calder: 28 volumes.
- Dr. Edward S. Cameron: Gwilym G. Davis—APPLIED ANATOMY. 3rd ed. Phil., 1915. John F. Binnie—MANUAL OF OPERATIVE SURGERY. 6th ed., Phil., 1914.
- Dr. John E. Donley: Claude Bernard—AN INTRODUCTION TO THE STUDY OF EXPERIMENTAL MEDICINE. N.Y., 1927. Harvey Cushing—STUDIES IN INTRACRANIAL PHYSIOLOGY AND SURGERY . . . Lond., 1926. Harvey Cushing—PAPERS RELATING TO THE PITUITARY BODY, HYPOTHALAMUS AND PARASYMPATHETIC NERVOUS SYSTEM. Springfield, Ill., 1932.
- Dr. Ernest K. Landsteiner: Karl Landsteiner—THE SPECIFICITY OF SEROLOGICAL REACTIONS. Cambridge, Mass., 1946.
- Dr. Thomas H. Murphy: SYMPOSIUM ON CANCER OF THE HEAD AND NECK. American Cancer Society, 1957.
- Dr. John D. Pitts: William Salmon—DORON MEDICUM: or, a Supplement to the New London Dispensatory. In three books . . . 2nd ed. cor. Lon., 1688. Internal evidence seems to indicate that it was owned at one time by Dr. Amos Throop, the first President of the Rhode Island Medical Society.
- From the Estate of Charles W. Dunbar, M.D. Given by his family: 10 volumes.

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American College of Surgeons — 1959 DIRECTORY. Chic., 1959. Gift of the College.

Odin W. Anderson—VOLUNTARY HEALTH INSURANCE IN TWO CITIES. Harvard University Press, Cambridge, 1957. Gift of the Executive Office.

Chicago Medical Society — CLINICAL CONFERENCE . . . Chic., 1958. Gift of the Society.

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COMMUNICATIONS DES INVITES ETRANGERS. Congres national des sciences medicales. Bucarest 5-11, Mai 1957. Gift of the Ministerul Sanatatu si Prevederilor Sociale Centrul de Documentare Medicala, Rumania.

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Eve Curie—JOURNEY AMONG WARRIORS. Doubleday, Doran & Co., Inc., Garden City, N.Y., 1943. Gift of Miss Grace E. Dickerman.

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Wednesday, October 14 at 8:30 P.M.

Doctor Isaac Gerber Oration

at the

Miriam Hospital
